

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
11 August 2005 (11.08.2005)

PCT

(10) International Publication Number  
WO 2005/073689 A1

(51) International Patent Classification?: G01M 11/02, A61B 3/12, G01J 9/00

(21) International Application Number:  
PCT/AU2005/000020

(22) International Filing Date: 11 January 2005 (11.01.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
2004900487 2 February 2004 (02.02.2004) AU

(71) Applicant (for all designated States except US): IATIA IMAGING PTY LTD [AU/AU]; Suite 2, 935 Station Street, Box Hill North, Victoria 3129 (AU).

(72) Inventors; and

(75) Inventors/Applicants (for US only): ALLMAN, Brendan, Edward [AU/AU]; 25 Jarvic Street, East Brunswick, Victoria 3057 (AU). NUGENT, Keith [AU/AU]; 28 Rowe Street, North Fitzroy, Victoria 3068 (AU).

(74) Agent: GRIFFITH HACK; 509 St Kilda Road, Melbourne, Victoria 3004 (AU).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

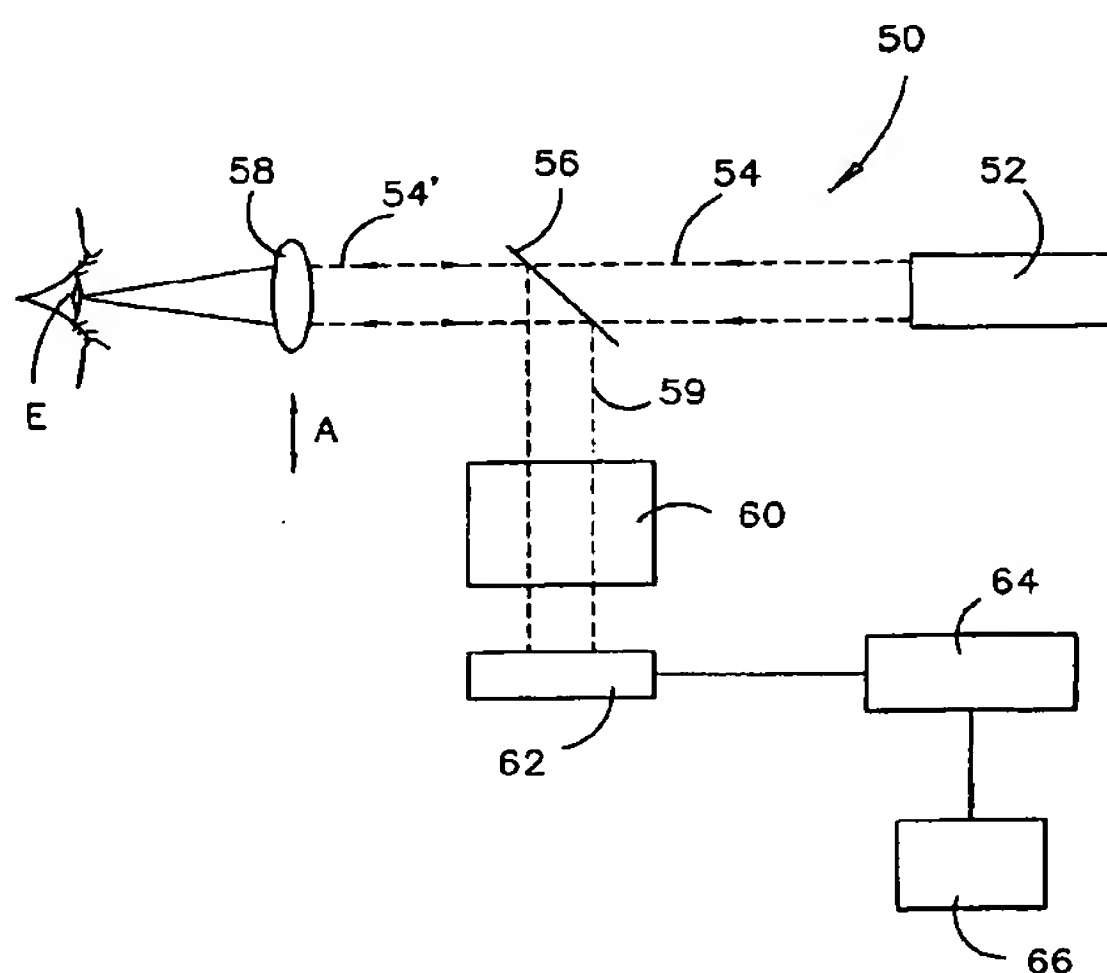
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: APPARATUS AND METHOD FOR CORRECTING FOR ABERRATIONS IN A LENS SYSTEM



(57) Abstract: A method and apparatus for compensating for aberrations or distortions of an optical system such as an eye of a patient which is to be imaged by a camera is disclosed. Light passing through the optical system is detected by a charge coupled device (62) via an imaging system (60). Phase data relating to the light passing through the system is determined and a processor (64) processes the data so that a transformation is determined which transforms the data relating to the wavefront of the light so that the phase data is transformed to remove aberrations or distortions introduced by the optical system. Thus, clearer images of the fundus of an eye generated by light passing through the optical system of the eye and for determining distortions or aberrations introduced by the optical system of the eye are provided.

WO 2005/073689 A1